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<b>(21) International Application Number:</b> PCT/US00/05594 <b>(22) International Filing Date:</b> 3 March 2000 (03.03.00) <b>(30) Priority Data:</b> 60/123,071 3 March 1999 (03.03.99) US <b>(71)(72) Applicants and Inventors:</b> LEWANDOWSKI, Gail [US/US]; 5800 North Kolb, Apt. 12266, Tuscon, AZ 85750 (US). PRINCE, Gregory, A. [US/US]; 14800 Petit Way, Potomac, MD (US). GUZOWSKI, John [US/US]; 5800 North Kolb, Tuscon, AZ 85750 (US). <b>(74) Agents:</b> GARRETT, Arthur, S. et al.; Finnegan, Henderson, Farabow, Garrett & Dunner, L.L.P., 1300 I Street, N.W., Washington, DC 20005-3315 (US).		<b>(81) Designated States:</b> AU, CA, JP, US, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).  <b>Published</b> <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>

**(54) Title:** APPLICATION OF DNA VECTORS FOR THE TREATMENT OF VIRAL INFECTION**(57) Abstract**

The present invention relates to DNA-based constructs and methods for treating viral infections. In a preferred embodiment, an HSV based amplicon is topically applied to the site of an actively replicating HSV infection, initiating a four-tier anti-viral therapy. First, IFN- $\gamma$  expression from a constitutive promoter exerts an antiviral effect at the site of active infection. Second, replication machinery of the resident virus packages the amplicon into HSV virions, *in situ*, thereby decreasing the infectious titer. Third, HSV virion containing amplicon DNA are transported into the nervous system where IFN- $\gamma$  expression promotes the establishment of latency. Fourth, as the host is exposed to emotional or physical stressor that reactivate the virus, amplicon-directed IFN- $\gamma$  is expressed. Increasing titers of IFN- $\gamma$  enforce viral latency.